DOCUMENT RESUME

ED 108 402 88 EC 072 946

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TITLE Models for Educating the Learning Disabled (MELD) Project Period 1973-74: Final Evaluation Report.
INSTITUTION Durham County Schools, N.C.
SPONS AGENCY Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; North Carolina State Dept. of Public Instruction, Raleigh.
PUB DATE Jul 74
NOTE 50p.

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS Academic Achievement; Behavior Change; *Elementary Education; Exceptional Child Research; Followup Studies; *Learning Disabilities; *Program Evaluation; *Remedial Programs; Social Adjustment
IDENTIFIERS Elementary Secondary Education Act Title III; ESEA Title III; Project MELD

ABSTRACT

Reported were first and second year data on the Models for Educating the Learning Disabled (MELD) Project, as well as a followup study of students who had participated in the MELD Project. First year data was based on a sample of 108 children in first through fourth grades, while second year data reported a sample of 97 children in first through fourth grades. A sample of 48 children (second through fifth grades) who had received services the previous year were followed up and retested with measures of achievement and classroom behavior. Remediation was carried on according to either a deficit model which emphasized the remediation of specific weaknesses through one-to-one instruction by resource teacher, or an eclectic model which stressed teacher consultation and attempted to capitalize on strengths as well as remediate weaknesses. Data indicated that the average child who participated in the program was below grade level when referred and was functioning at grade level when intervention was terminated. Classroom teachers who referred students to the program rated their children as significantly improved in both academic skills and personal/social behavior. Interviews with referring classroom teachers offered considerable evidence of teacher acceptance and support for the program. However, followup data suggested that children who received services the previous year failed to progress academically at the same rate over the first half of the next year without additional services. (GW)

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ED108402

Final Evaluation Report

Models for Educating the Learning Disabled (MELD)

Project Period 1973-1974

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July 1, 1974

Submitted to

The North Carolina State Department of Public Insfruction,

Division of Development

EC072946

Acknowledgements

This report was prepared pursuant to an evaluation contract to the first author from the Durham County Public Schools under an ESEA Title III grant from the N. C. State Department of Public Instruction. The conclusions and interpretations expressed in this report are those of the authors and do not necessarily reflect the opinions or policies of the contractor or the funding agency.

The authors wish to express particular thanks to each of the project teachers: Linda Anderson, Diane Cheskis, Sue Goldstein, Jeanne Healy, Pam Hunter, and Margaret Scarborough, for their persistence and considerable efforts in collecting the evaluation data. Their commitment to the evaluation effort has been remarkable and has contributed not only to the assessment of project objectives, but also to our knowledge about the learning disabled child. Finally, the authors wish to thank Mary Sue Comstock, Ron Haskins and Miriam Clifford for their valuable aid in the preparation of the report.

Introduction

Project MELD is a cooperative effort of the Durham County, Orange County and Chapel Hill-Carrboro public schools which was designed to serve learning disabled children. Project MELD is currently in its second year of funding by ESEA Title III. The major goal for the project is to identify effective and efficient models for increasing the academic and social competences of children with learning disabilities. The project proposes to carry out services according to two alternative approaches (Deficit-centered versus Eclectic) with children in the first four grades.

Deficit-Centered Remediation. The deficit centered approach stresses the remediation of specific weaknesses in academic skills. Children who are taught under this model receive individual instruction for 30-45 minutes each day for a period of 3-4 months. The instructional objective for this model is to remediate deficits in basic information-processing skills to the point where the child can profit from the regular instructional program. The learning disabilities teachers assume the major responsibility for remedial instruction and offer only general support and interpretive consultation to the referring classroom teacher. Thus, the model does not require that the prescriptive programming be carried out by the classroom teacher.

Eclectic Remediation. On the other hand, the eclectic approach stresses teacher consultation aimed at maintaining the child in his regular classroom. The eclectic approach not only attempts to compensate for identified weaknesses but also capitalizes on strengths as well in order to determine the most effective management techniques and materials that can be used by the classroom teacher. Students who are taught by this model

receive instruction from the learning disabilities teacher for 1-3 hours each day for 2-8 weeks. In addition to remedial instruction, an educational prescription is prepared for each child to be used by the classroom teacher. An extensive follow-up procedure is used which includes classroom demonstrations, assistance with materials and methods, and re-evaluation and modification of the prescription if necessary.

Continuing Objectives

The continuing objectives of Project MELD are: (1) to increase the cognitive and social skills of learning disabled children, (2) to increase the positive effective and affective interaction between the classroom teacher and the learning disabled child, (3) to increase parental knowledge and understanding of the learning disabled child, (4) to increase public awareness of specific learning disabilities, and (5) to determine the cost effectiveness of the two treatment approaches.

Summary of First Year Evaluation

During the 1972-73 school year the project delivered services to approximately 220 children in grades 1-4. Services were carried out according to either the deficit or eclectic approach in either a school or clinic setting. The school based programs were operated by the three administrative units listed above and the clinic based program was located in the Division for Disorders of Development and Learning of the Child Development Institute, University of North Carolina.

In order to evaluate program effectiveness, a sample of 108 children who participated in the project were pre- and post-tested on measures of academic achievement and classroom behavior. In addition, parents were asked to complete a home behavior rating scale and a questionnaire. Also, 35 classroom teachers who referred children to the project were interviewed twice during the year and a cost analysis was performed.

The analysis of these data indicated that Project MELD was highly successful in producing educationally significant gains in the academic achievement of children who might otherwise be expected to make little progress over the period of the study. Also, the project was successful in demonstrating significant progress in the development of phonetic language skills by learning disabled children. In general, these results were substantiated by teacher reports of student progress. Although significant changes were found in two areas measured by the Classroom Behavior Inventory for two of the groups, it must be concluded that the project had little impact on teacher's perceptions of the academic and social behavior of LD children as measured by this instrument. On the other hand, during the interviews a large majority of classroom teachers commented on improved self-concept, attention, persistence and activity level. Thus, some evidence was obtained to suggest that the classroom teachers of LD children did perceive progress in social and personal functioning that was not documented by the instrument that was used. This year another instrument was selected in the hopes of better documenting these changes.

The results from interviews with referring classroom teachers offered considerable evidence of teacher acceptance and support for the project. A large number of teachers felt that they had gained a greater understanding of the problems experienced by LD children and were better able to help them as a result of the project. The teachers particularly valued the diagnostic work-ups and conferences in this regard and were frequently able to cite changes that they had made in their approach with the child as the result of this service.

In general, the teachers reported an accepting, favorable attitude on the part of most parents. Several of the teachers indicated that they had profited professionally from joint conferences in that they were better able to deal with parents concerning sensitive issues with their children. In many respects, the record on parent involvement in this project has been remarkable and may be regarded as one of the most effective components of the program.

At the present time, the evaluation findings reported above do not support the conclusion that either model is more effective than the other in producing gains in the cognitive or social competencies of learning disabled children. Similarly, very little evidence was obtained that either model was more effective at some grade levels than at others, or that either model was more effective in a clinic setting than in a school setting. Given these outcomes, the eclectic model in the school setting appeared to be more cost-effective than the deficit model in either setting due to the larger number of children that were served. However, additional information on the effectivenss of teacher consultation services under this model must be obtained in order to adequately compare the cost-effectiveness of the two approaches.

Second Year Evaluation Strategy

The evaluation of objectives during the 1973-74 project year was carried out in three phases. The goal for the first phase was to determine the effectiveness of the two models in producing behavioral change in each of the areas delineated by the specific objectives. The evaluation design for this phase was a 2(Deficit versus Eclectic) x 4(grades 1-4) factorial with 2 repeated measures (pre and post). A total of 97 children were sampled from those served by the project. Children were selected who best fit the definition of learning disabilities

that was used in the project, and an attempt was made to form groups that were comparable with respect to sex ratio, age and ability level.

Test Instruments

(1) Peabody Individual Achievement Test (PIAT). This test provides measures of mathematics, reading recognition, reading comprehension, spelling, and general information. The children were pre-tested as part of the diagnostic procedure and were post-tested after a period of approximately five months in the project.

(2) Wide Range Achievement Test (WRAT). In order to provide a more complete assessment of spelling skills, the WRAT spelling subtest was given on a pre- and post-test basis. The pre- and post-test interval was the same as that for the PIAT.

(3) Phonics Test (PT). This test was designed to assess improvement in basic language skills. Each child was pre-tested as part of the diagnostic procedure and was post-tested after five months.

(4) Pupil Rating Scale (PRS). Referring classroom teachers were requested to fill out the Myklebust Pupil Rating Scale when they referred a child and again approximately five weeks after he had been released from the program. This measure provides teacher ratings on a five-point scale of Auditory Comprehension, Language, Orientation, Motor Coordination, and Personal-Social Behavior.

(5) Structured Interview. During February and March the external evaluator conducted interviews with 24 classroom teachers (4 per school) in order to assess their views regarding the referral, diagnostic and treatment process in their school. Each interview lasted approximately 30 minutes and an attempt was made to elicit specific opinions about the strengths and weaknesses of each program and the teachers' estimates of the academic and behavioral progress of their children. These findings were reported in narrative form.

(6) Parent Questionnaire. At the end of the school year parents were asked to complete a questionnaire which assessed their opinions of the program and their child's progress. They were asked to indicate the strengths and weaknesses of the program from their point of view and to state whether they would recommend it to other parents.

The objective for the second phase of the evaluation strategy was to assess the longitudinal impact of Project MELD through the analysis of follow-up data. The follow-up design was a 2(model) x 4(grade) factorial in which 12 children at each grade level who received services during the 1972-73 school year were located and re-tested with the PIAT, Classroom Behavior Inventory and Phonics Battery. Also, their parents were asked to complete a follow-up questionnaire.

The third phase consisted of a process evaluation to determine the extent to which changes in student progress could be attributed to the activities of the program. The data for the process evaluation were obtained from: (1) on-site interviews by the external evaluator with project teachers, classroom teachers, and administrators; (2) the analysis of teacher activity logs; (3) observation during teacher workshops, and (4) a review of project management procedures with the project director. Part of the process evaluation included an analysis of the relative cost of each model of remediation.

Evaluation Results

Teacher Activities

The teacher activity logs were collected and summarized in Table 1 in order to provide an overview of program activities in each model. A total of 231 children were referred to project teachers, and of this number, 174 (75%) were diagnosed as learning disabled. Of those who were identified, 116 (67%) were treated in project classes and another 18 were

Table 1

Summary of Teacher Activities

	Eclectic				Defici		
	FPG	Stan	Holt	Total	LR	OG	
Number referred	29	55	46	130	42	33	
Diagnosed LD	20	40	41	101	34	23	
Treated in Class	25	21	21	67	14	19	
Treated by Consult	6	1	9	16	0	0	
No. of Teacher Conferences	49	84	74	207	84	46	
Average Confer/Teach	3.50	4.67	3.52	3.89	5.25	3.54	
Teacher Consults	38	80	141	259	0	6	
Average Consults/Teach	3.17	4.44	8.81	5.47	0	1.50	
Classroom Observation	95	74	57	226	2	0	
Parent Conferences	51	66	69	186	29	40	
Teach Attending Workshops	6	18	6	30	16	2	
No. of Times/Teach	4	2.27	4	3.42	1.56	8.0	
Parents Attending Workshops	15	15	16	46	3	4	
No. of Times/Parent	1.27	1.67	1.19	1.37	1	1	

Table 1

Summary of Teacher Activities

	Eclectic				Deficit				
	FPG	Stan	Holt	Total	LR	OG	HV	Total	Grand Total
	29	55	46	130	42	33	26	101	231
	20	40	41	101	34	23	16	73	174
	25	21	21	67	14	19	16	49	116
	6	1	9	16	0	0	2	2	18
erences	49	84	74	207	84	46	51	181	388
h	3.50	4.67	3.52	3.89	5.25	3.54	3.92	4.24	4.06
	38	80	141	259	0	6	16	22	281
ach	3.17	4.44	8.81	5.47	0	1.50	2.29	1.26	3.36
on	95	74	57	226	2	0	0	2	228
	51	66	69	186	29	40	36	105	291
kshops	6	18	6	30	16	2	7	25	55
	4	2.27	4	3.42	1.56	8.0	4.71	4.76	4.09
orkshops	15	15	16	46	3	4	2	9	55
	1.27	1.67	1.19	1.37	1	1	1	1	1.19

treated in project classes and another 18 were treated by consultation to the classroom teacher. All together 79% of the children who showed learning disabilities received treatment.

These figures indicate a considerable improvement in the efficiency of the referral and diagnostic procedures over that observed the previous year. During the 1972-73 school year only 49% of the referrals were treated in project classes. This finding seems to be due to a number of factors related to the tenure of the program in the various schools. Many schools had not had LD programs the previous year and a large backlog of children who required special services had developed. Also, many classroom teachers were unfamiliar with the concept of learning disabilities and tended to refer children with other types of learning and/or adjustment problems. In general, these data underscore the importance of staff development efforts and an annual screening program to the efficient management of LD services.

Table 1 suggests that the two models provided somewhat different services which were consistent with the project objectives. Although the number of teacher conferences devoted to either gathering information about the child or to the reporting of results were about the same in each model, the eclectic teachers clearly spent more time in consultation with classroom teachers than the deficit teachers. Since the eclectic teachers also provided treatment by consultation, 82% of the LD students in their schools were served, compared to 69% in the deficit schools. On the other hand, the same proportion of LD children received individualized services in project classes of either model.

One finding that is worthy of note is the high rate of teacher participation in workshops. Of those teachers who referred children to the program 41% attended at least one workshop (36% for the eclectic schools

and 49% for the deficit schools). These figures are particularly impressive when one considers that many of the referring teachers participated the previous year. Perhaps more impressive was the finding that 41% of the parents of children who were served attended workshops. In many respects the continued success of the MELD program in promoting parent participation is remarkable.

Student Characteristics

Table 2 provides a summary of student characteristics for the evaluation sample. The sample contained 66 boys and 31 girls. The total sample of 97 children was composed of 70 white students and 27 black students. The average IQ for the eclectic group was 94.89 and that for the deficit group was 97.27. The socio-economic status of each child was estimated by using Hollingshead's scale for occupation of father. The average SES rating for the eclectic groups was 3.98 and that for the deficit groups was 3.50. Although the groups were well matched for IQ and CA withing grade levels, children in the first and second grade eclectic classes were from higher SES homes compared to those in the deficit classes in grades 1 and 2, whereas the opposite trend was found for the two upper grades ($F=3.11$, $p < .03$). Also, children in the deficit classes received treatment for a longer period of time (average=32.84 hours) compared to those in the eclectic classes (average= 25.04 hours).

Academic Achievement

The average pre- and post-test scores on the PIAT, WRAT spelling and Phonics tests are given in Table 3 for each group by grade. The average gains on each of the achievement measures for each group are shown in Table 4.

Pre-test Analysis. In order to determine whether the various groups were comparable in initial achievement, a 2(model) x 4(grade) analysis of

Table 2

Summary of Student Characteristics

Model	Eclectic				Defic	
Grade	1	2	3	4	1	2
N	12	8	17	11	9	12
Age	80.41	89.37	104.68	118.18	78.77	89.83
IQ	100.91	95.12	92.37	91.18	92.44	97.91
SES	3.75	3.25	4.12	4.81	4.22	3.33
Hours in Class	20.00	24.12	27.68	28.36	29.00	39.25

Table 2

Summary of Student Characteristics

Eclectic				Deficit			
1	2	3	4	1	2	3	4
12	8	17	11	9	12	14	14
80.41	89.37	104.68	118.18	78.77	89.83	103.07	115.33
100.91	95.12	92.37	91.18	92.44	97.91	98.57	100.16
3.75	3.25	4.12	4.81	4.22	3.33	3.57	2.91
20.00	24.12	27.68	28.36	29.00	39.25	31.85	31.25

Table 3

Average Pre and Post-test Achievement Scores for Each Group

Model		Eclectic					
Grade		1	2	3	4	1	2
Phonics Test	Pre	19.00	49.87	63.56	53.36	16.33	48.3
	Post	37.58	75.00	75.37	69.00	40.55	70.5
WRAT Spell	Pre	1.23	1.76	2.64	2.26	0.90	1.8
	Post	1.49	2.51	2.93	2.31	1.35	2.5
PIAT Math	Pre	1.20	1.73	1.97	3.39	0.75	1.4
	Post	1.51	2.27	2.81	4.40	1.10	2.5
PIAT Read Rec	Pre	1.16	1.80	2.68	2.18	1.21	1.9
	Post	1.60	2.60	2.90	2.35	1.50	2.4
PIAT Read Comp	Pre	1.23	2.13	2.68	2.66	1.41	2.3
	Post	1.86	2.67	2.87	3.03	1.86	2.6
PIAT Spell	Pre	1.15	1.78	2.65	2.77	1.05	1.9
	Post	1.50	2.38	2.88	2.68	1.41	2.7
PIAT Inf	Pre	1.76	1.58	2.67	3.82	0.76	1.8
	Post	2.16	2.51	3.11	4.47	1.30	2.3
PIAT Total	Pre	1.11	1.71	2.40	2.88	0.90	1.7
	Post	1.56	2.37	2.85	3.28	1.30	2.4

Notes: With exception of Phonics raw scores, all variables are grade equivalents.

Table 3

Average Pre and Post-test Achievement Scores for Each Group

	Eclectic				Deficit			
	1	2	3	4	1	2	3	4
	19.00	49.87	63.56	53.36	16.33	48.33	71.14	77.61
	37.58	75.00	75.37	69.00	40.55	70.50	86.21	87.84
	1.23	1.76	2.64	2.26	0.90	1.80	2.41	3.13
	1.49	2.51	2.93	2.31	1.35	2.52	3.01	3.64
	1.20	1.73	1.97	3.39	0.75	1.49	2.37	3.90
	1.51	2.27	2.81	4.40	1.10	2.50	3.24	4.85
	1.16	1.80	2.68	2.18	1.21	1.94	2.44	3.10
	1.60	2.60	2.90	2.35	1.50	2.40	3.18	3.75
	1.23	2.13	2.68	2.66	1.41	2.31	2.62	3.38
	1.86	2.67	2.87	3.03	1.86	2.64	3.08	3.96
	1.15	1.78	2.65	2.77	1.05	1.97	2.58	3.26
	1.50	2.38	2.88	2.68	1.41	2.77	3.20	3.80
	1.76	1.58	2.67	3.82	0.76	1.80	3.02	3.58
	2.16	2.51	3.11	4.47	1.30	2.31	3.76	4.16
	1.11	1.71	2.40	2.88	0.90	1.79	2.46	3.28
	1.56	2.37	2.85	3.28	1.30	2.45	3.12	3.96

xception of Phonics raw scores, all variables are grade equivalents.

variance was carried out on each pre-test measure. This analysis indicated that the deficit and eclectic groups were well matched on each of the PIAT and WRAT measures within grade levels. However, children in the third and fourth grade eclectic classes were found to score lower initially on the Phonics test than those of the same age in the deficit classes ($F=3.86$, $p < .05$).

Average Gains. A series of related t-tests was performed on the mean pre- and post-tests for each group and for the total sample to assess the significance of changes on each measure. Table 4 shows the average change scores and related *t*'s for each group. In every case, the magnitude of these changes proved to be significant at a probability level greater than .01.

In order to compare the relative effectiveness of the deficit and eclectic models as a function of grade level, a 2(model) x 4(grade) analysis of variance was carried out on the change scores for each variable. The results for the Phonics test revealed that children in the first two grades showed greater gains than those in grades 3 and 4; however, no significant differences were found between the two models in this regard. Although this finding was varified by an analysis of covariance in which the pre-test scores were held constant, it should be noted that the scores on this test were not standardized. Therefore, these results could reflect ceiling effects at upper grade levels.

The analysis of gains on the WRAT spelling test indicated that the children in deficit classes made greater progress in this area than those in eclectic classes ($F = 4.90$, $p < .05$). Also, children in the second grade displayed greater gains on this test compared to those in the other three grades ($F = 3.56$, $p < .05$). Essentially, the same findings were obtained on the PIAT spelling subtest in that the deficit groups showed

Table 4

Average Change Scores on Achievement Measures for Each Group

Variable	Eclectic		Deficit		Total	
	$\bar{X}d$	t	$\bar{X}d$	t	$\bar{X}d$	t
Phonics Test	16.70	11.41	17.25	8.54	16.97	13.63
WRAT Spell	.30	4.60	.58	6.99	.44	8.10
PIAT Math	.69	5.71	.81	5.28	.75	7.70
PIAT Read Rec	.36	4.94	.56	7.98	.46	8.97
RIAT Read Comp	.39	5.52	.44	4.58	.42	6.97
PIAT Spell	.24	2.28	.58	5.05	.41	5.17
PIAT Inf	.57	4.20	.60	5.41	.58	6.73
PIAT Total	.47	9.27	.61	12.19	.54	14.95

Notes: Grade equivalent scores for variables except Phonics Raw Score.

Change significantly greater than 0 at $p < .01$ in each case.

greater gains than eclectic groups ($F = 9.27$, $p < .003$). In both cases, these effects were maintained when the pre-test scores were controlled by covariance procedures.

Significant group or grade differences were not observed on the PIAT math, reading comprehension, or general information subtests. However, a reliable group x grade interaction was found on the PIAT reading recognition subtest ($F = 4.50$, $p < .01$). This effect indicated that the eclectic groups were superior to the deficit groups in the first and second grades on this subtest, whereas the deficit groups were superior to the eclectic groups in the third and fourth grades. The analysis of gains in PIAT total achievement showed a trend which favored the deficit groups; however, the differences between the two models failed to reach an acceptable level of significance and could be attributed to the differences reported above on the spelling subtest.

Discussion. As in the previous year, it may be concluded from these data that project MELD was quite successful in producing educationally important gains in children who might otherwise fail to progress over the period of treatment. Given the pre-post test interval, one would expect the average child to show a gain of approximately .42 years. Inspection of the gains in Table 4 indicates that the average child in project MELD met this expectation in three out of five academic areas and exceeded it in two others. Similarly, inspection of Table 3 shows that the average child in the project was below grade level in total achievement when referred and was functioning at grade level when returned to the regular school program.

At the same time, the results from the comparisons of the two models are not all together consistent with those obtained from the previous year.

Although the data as a whole do not support the conclusion that either model is more effective than the other in producing cognitive gains, the trend shown in Table 4 generally favors the deficit approach. Also, rather clear differences were obtained between the deficit and eclectic groups with respect to gains in spelling.

One factor which complicates these findings is that students in the deficit classes received more instruction on a one-to-one basis than those in the eclectic classes. Also, during this year a greater effort was made to draw a clear distinction between the kinds of services offered under each model. Since the deficit approach stressed the remediation of weaknesses in basic academic skills, this model may have provided a more concentrated program than one which also attempted to deal with strengths and the child's functioning in the regular classroom. Similarly, the differences between the two models with respect to gains in spelling may merely reflect a greater emphasis in this area on the part of the deficit teachers.

Another factor which should be considered in interpreting the differences between the models in academic gains is the absolute magnitude of the differences. The average difference between the deficit and eclectic groups in gains on the WRAT spelling test was .28 years or less than 3 months. Since both models produced significant gains in this area, one might question whether a difference of this magnitude is educationally important, particularly in light of the fact that the overall difference between the two models in total achievement was only one month.

Classroom Behavior

The average pre- and post-test ratings on the Pupil Rating Scale are given in Table 5 for each model by grade. Table 6 shows the average change in mean ratings on each scale for each group.

Table 5

Average Pre-test and Change Scores on the Pupil Rating Scale

Model		Eclectic				Def	
Grade		1	2	3	4	1	2
Auditory Comprehension	Pre	8.33	8.75	7.82	8.66	7.88	8.75
	Xd	.91	1.25	1.82	.77	2.22	1.00
Spoken Language	Pre	11.50	12.00	11.11	12.22	10.11	11.00
	Xd	.91	-.12	1.52	-.55	1.22	1.33
Orientation	Pre	9.00	9.62	9.58	10.66	9.00	7.91
	Xd	1.50	1.12	.88	1.00	.33	1.33
Motor Coordination	Pre	7.66	7.75	8.35	8.55	7.88	7.50
	Xd	.33	1.00	-.11	1.00	.11	.41
Personal/Social	Pre	19.75	18.75	19.82	23.33	20.00	20.33
	Xd	2.50	1.00	.88	.44	.55	1.25
Verbal Score	Pre	19.83	20.75	18.94	20.88	18.00	19.75
	Xd	1.83	1.12	3.35	.22	3.44	2.33
Non-Verbal Score	Pre	35.58	36.12	37.37	42.54	36.88	35.75
	Xd	5.16	3.12	1.64	2.44	1.00	3.00
Total Scale Score	Pre	55.41	56.87	56.31	63.42	54.88	55.50
	Xd	7.00	4.25	5.00	3.77	4.44	5.33

Table 5

Average Pre-test and Change Scores on the Pupil Rating Scale

		Eclectic				Deficit			
		1	2	3	4	1	2	3	4
on	Pre	8.33	8.75	7.82	8.66	7.88	8.75	8.14	8.78
	Xd	.91	1.25	1.82	.77	2.22	1.00	1.42	1.14
	Pre	11.50	12.00	11.11	12.22	10.11	11.00	11.78	12.21
	Xd	.91	-.12	1.52	-.55	1.22	1.33	1.57	-.28
	Pre	9.00	9.62	9.58	10.66	9.00	7.91	10.00	10.50
	Xd	1.50	1.12	.88	1.00	.33	1.33	.71	1.21
	Pre	7.66	7.75	8.35	8.55	7.88	7.50	7.87	8.50
	Xd	.33	1.00	-.11	1.00	.11	.41	.78	.50
	Pre	19.75	18.75	19.82	23.33	20.00	20.33	19.78	22.42
	Xd	2.50	1.00	.88	.44	.55	1.25	.57	.42
	Pre	19.83	20.75	18.94	20.88	18.00	19.75	19.92	21.00
	Xd	1.83	1.12	3.35	.22	3.44	2.33	3.00	.85
	Pre	35.58	36.12	37.37	42.54	36.88	35.75	37.64	40.08
	Xd	5.16	3.12	1.64	2.44	1.00	3.00	1.35	2.85
	Pre	55.41	56.87	56.31	63.42	54.88	55.50	57.56	61.08
	Xd	7.00	4.25	5.00	3.77	4.44	5.33	4.35	3.71

Table 6

Average Change in Ratings on the Pupil Rating Scale

	Eclectic		Deficit		
	$\bar{X}d$	t	$\bar{X}d$	t	
Auditory Comprehension	1.28	5.13**	1.38	5.19**	1
Spoken Language	.67	2.28**	.91	2.90**	
Orientation	1.10	3.93**	.93	3.21**	1
Motor Coordination	.41	1.94*	.48	2.65**	
Personal/Social Behavior	1.23	2.35*	.69	1.56	
Verbal Score	1.95	4.32**	2.30	4.51**	2
Non-Verbal Score	2.97	3.45**	2.12	2.68**	2
Total Scale Score	5.15	5.12**	4.42	3.99**	4

Notes: * change greater than 0 at $p < .05$

** change greater than 0 at $p < .01$

Table 6

Average Change in Ratings on the Pupil Rating Scale

	Eclectic		Deficit		Total	
	$\bar{X}d$	t	$\bar{X}d$	t	$\bar{X}d$	t
on	1.28	5.13**	1.38	5.19**	1.33	7.32**
	.67	2.28**	.91	2.90**	.80	3.70**
	1.10	3.93**	.93	3.21**	1.02	5.04**
	.41	1.94*	.48	2.65**	.45	3.24**
vior	1.23	2.35*	.69	1.56	.95	2.80**
	1.95	4.32**	2.30	4.51**	2.13	6.25**
	2.97	3.45**	2.12	2.68**	2.53	4.36**
e	5.15	5.12**	4.42	3.99**	4.77	6.38**

nge greater than 0 at $p < .05$

nge greater than 0 at $p < .01$

Pre-test Analysis. The analysis of the pre-test ratings for each scale indicated that there were no significant differences between the groups or among the grade levels in the initial ratings assigned by classroom teachers.

Average Change in Teacher Ratings. The results of a series of t-tests for related samples performed on the change scores for each PRS variable are shown in Table 6. Table 6 shows that the classroom teachers of children who received eclectic remediation rated their children as significantly improved in all areas. The teachers of children who received deficit remediation rated their children significantly higher in all areas except personal and social behavior.

In order to compare the changes in teacher ratings for deficit groups and those for the eclectic groups a 2(model) x 4(grade) analysis of variance was performed on each PRS variable. In general, this analysis failed to show significant differences between the two models on each scale and on the total scores. Students in grades 1 and 3 were rated higher on the Spoken Language scale than those in grades 2 and 4. However, no other significant grade effects were observed.

Discussion. These results indicate that teachers who referred children to project MELD perceived significant progress in the ability to comprehend, use language, perceive relationships and perform in a coordinated fashion. On the other hand, the results were equivocal with respect to personal and social behavior. Apparently, the teachers in the eclectic schools did perceive significant progress in these areas, whereas those in the deficit schools saw little progress in their children's classroom behavior.

These results may reflect the fact that teachers in the eclectic schools received greater assistance from the LD teacher in dealing with issues involving the child's behavior in the classroom. It was noted during

the interviews with classroom teachers that the teachers in deficit schools were more likely to view the LD teacher as a specialist in "learning problems", whereas those in the eclectic schools more often viewed the LD teacher as a consultant on any topic involving the child's progress in school. Also, the eclectic teachers were in a better position to establish and maintain intervention programs aimed at improvement in personal/social functioning since many of their activities took place in the classroom and involved the cooperation of the classroom teacher.

Interviews with Classroom Teachers.

The evaluator conducted interviews with 24 classroom teachers (4 per school) during March in order to assess their views of the programs. Each interview lasted approximately 30 minutes. Whenever possible, teachers were selected who were not interviewed in the previous year. Four of the six principals were available for interviews on the scheduled days and their opinions about the program were also elicited.

Referral System. Each of the teachers was asked how many children they had referred, whether they were selected for the program, and how quickly they were seen. In almost every case, the teachers reported that referrals were processed within two weeks. As in the previous year, the teachers were greatly impressed with the immediacy of services and the promptness of diagnostic feedback. The availability of the project teachers was valued greatly and was perceived as one of the major strengths of the program. Several teachers commented that this factor set the MELD program apart from other types of assistance which were slower in providing services. However, as in the previous years, the evaluator could not locate any teachers who enjoyed filling out forms.

Two of the major factors which seemed to facilitate the referral process in several schools were the teachers' familiarity with the program

as carried out the previous year and the year-end screening of children last year for services this year. It was clear that the teachers' experience with learning disabled children and with the LD teacher facilitated early identification and referral. Those teachers who had difficulty in selecting children to refer usually attributed it to their lack of training in the area or to the fact that it was their first year in the school.

In summary, both the teachers and the evaluator found the referral system to be highly efficient and facilitative of the child's early entry into the program. The speed and manner in which referrals were processed was valued greatly by the teachers and contributed significantly to their positive evaluation of the program.

Diagnostic Process. In every case the teachers reported that follow-up conferences were most helpful to them in understanding the nature of the child's problem and the remedial program that was proposed. As in the previous year, the evaluator got the impression that teachers would refer a child for this service alone, particularly in those instances in which individualized prescriptions were prepared for the teacher. Where other types of diagnostic services were available, many teachers reported that they preferred the service provided by the project teacher.

At the same time, the diagnostic load borne by the project teachers seemed to be less this year than last year. In the various schools the "hit rate", i.e., proportion of appropriate referrals, varied from 60% to 83%, which indicates that most of the classroom teachers were making appropriate referrals. Also, consultation by the LD teacher in the eclectic schools during the referral process seemed to increase the

"hit rate," and thereby lead to more efficient diagnostic services.

Each of the teachers reported that they were favorably impressed by the thoroughness of the diagnostic work-up, and felt that an extensive assessment was essential for the identification of the child's needs. Also, the classroom teachers were impressed with the ability of the project teachers to translate technical information about the child into meaningful language which not only facilitated their understanding of the child's problem, but also that of his parents.

As in the previous year, the teachers' knowledge and understanding about the diagnostic process varied somewhat according to the model that was used in her school. The teachers in the eclectic schools seemed to have a greater sense of participation in the diagnostic process and more clearly saw the relationship between diagnostic information and the proposed instructional program for the child. The teachers in the deficit schools were more likely to view the diagnostic process as providing essential information which contributed to their understanding of the problem, but were less likely to use this information in planning activities for the regular classroom. These impressions correlate well with the figures in Table 1 on the frequency of teacher consultations under each model, and suggest that the utilization of diagnostic information does vary with the type of service which is offered.

Treatment Process. The classroom teachers were quite impressed with the speed with which children were placed in project classes. In every instance the teacher was able to delineate at least two areas in which she could give examples of improvement. The teachers reported that their children were eager to go to the project classes, and that many seemed to be more excited about school in general. Also, most of the teachers commented on improved self concept and social behavior,

although frequently these were not the major reasons for referral.

As with the diagnostic process, certain differences were noted in the teachers' perception of the treatment process as carried out under the deficit and eclectic models. The teachers in the eclectic schools more often viewed the project teacher as a consultant as well as one who offered direct services to children. Teachers in these schools seemed to have a better idea of what methods were used and how they related in a programmatic way to the curriculum.

Also, teachers in the eclectic schools were more likely to attribute success to the instructional procedures that were used and to their own efforts in carrying out the suggestions offered by the LD teacher. These teachers valued the prescriptive write-ups greatly and indicated that the suggestions were quite practical and easily implemented in their classes. They felt that they could continue with many of the procedures that had been developed in the LD class and use them with other children in their class who presented similar problems.

In the deficit schools, the teachers were more likely to attribute success to enhanced self concept rather than to specific instructional activities. When asked what produced the improvement they observed, they frequently cited the support that was offered in a "one-to-one" relationship, and often indicated that removal from the regular classroom was a necessary condition for providing such support. Also, teachers in the deficit schools were more likely to attribute success to the activities of the LD teacher rather than to their own efforts.

Although the majority of the deficit model teachers commented that they wished to be more involved in the treatment process, some seemed to be quite comfortable with the resource arrangement and viewed the LD teacher as an expert who was more adequately prepared to deal with

such problems. Also, a number of these teachers felt that they could not provide the kind of individualized program required for the LD child in the regular classroom, and expressed doubts as to how effective they would be in carrying out the suggestions of the resource teacher. In this regard, it was interesting to note that a few of the teachers in eclectic schools spontaneously expressed some guilt over the fact that they were unable to follow through on all of the recommendations made by the LD teacher.

These findings suggest that there are marked individual differences among classroom teachers in the extent to which they are either prepared or inclined to use the resources offered by a particular LD program. Since the services that are provided by the deficit and eclectic approaches vary in degree of responsibility assigned to the classroom teacher, greater attention should be devoted to the relationship between the type of service that is offered and the classroom teachers' perceptions and expectations for the service. In this manner, it may be possible to tailor an LD program to meet the needs of the individual classroom teacher/child pair as joint consumers of the service as opposed to concentrating on child services alone.

Parent Attitude. In general, the classroom teachers and principals reported an accepting, favorable response from the parents they talked to. Any difficulties in dealing with parents were attributed to the perception of the program as "special education" or to the parents' general lack of participation in school affairs. In several instances, the teachers indicated that they appreciated the LD teacher's assistance in explaining the problem to parents and felt that they had profited professionally from joint conferences.

Recommendations from Classroom Teachers.

(1) A number of teachers felt that the need was so great in their

school as to warrent a second LD teacher or at least an aide for the LD teacher. These teachers felt that additional children who fell outside the IQ range in the program or who were in the upper grades might be served also. Some teachers suggested that a team approach, e.g., LD teacher, psychometrician, aide, etc., might lead to a more expanded range of services.

(2) In this regard, several teachers suggested that the children should be seen for a longer period of time. It was felt that some children with severe disabilities might require services over the entire year, while those with less severe problems might only require several months of instruction.

(3) As in the previous year, teachers in the deficit model schools frequently stated that they would like more contact with the LD teacher. These teachers felt that they could better follow through and reinforce the progress that had been made if they had a clearer understanding of what was done and how it related to their curriculum.

(4) On the other hand, it was interesting to note that some of the teachers in the eclectic schools felt that the LD teacher gave them more ideas and materials than they could hope to use. In some cases, they indicated that they were unable to follow through because the materials required a one-to-one procedure and they were unable to modify them for small group work or were unable to schedule a time for one-to-one instruction.

(5) A number of teachers indicated that they wished to have more time to consult the LD teachers and felt that an aide or parent volunteers might be used to supervise classes.

(6) Several teachers indicated that they felt that the physical facilities assigned to the LD teacher were not the best and that she should have additional resources to produce and disseminate materials.

In this regard, two teachers felt that the program could benefit from a media component which would produce materials for the LD teacher.

(7) Also, the teachers frequently cited the need for continuing teacher education in the field of learning disabilities. They felt that workshops should not only be concerned with identification, but should also concentrate on materials and methods which are appropriate for specific types of learning problems.

(8) A number of teachers were concerned about follow-up and suggested that some provisions should be made for additional work with the same children next year. Although these teachers were impressed with the improvement that was shown, they often expressed the fear that the child might regress without continued support from the LD teacher.

Parent Questionnaire

Each of the parents of children in the project was requested to fill out the questionnaire shown in Table 7. A total of 62 forms were returned, and the data were summarized in percentages in Table 7. In general, these data show rather clearly that the program received the support and approval of the vast majority of parents. The only equivocal response was item 5a (Did you have the opportunity to attend a workshop?). Inspection of the forms and parents' comments suggests that the question was widely misunderstood. Most parents who did not attend, could not for a variety of reasons unrelated to the efforts of the resource teacher. It is clear from the data in Table 7 that a significant number of parents felt that MELD was a positive experience for them as well as for their child.

Follow-up Evaluation

In order to assess the longitudinal effects of project MELD, a sample of 48 children who received services in the school based groups in 1972-73 were located and re-tested during January, 1974. Each child was

Table 7

Parent Questionnaire

	Yes	No
1. Did you understand the nature and purposes of the resource classroom your child attended?	95%	05%
2. Were you made aware of your child's particular learning problem through an individual parent-teacher conference with the resource teacher?	84%	16%
a. If not, did you have the opportunity to attend such a conference?	67%	33%
3. Did you feel that your child made progress in the classroom as a result of going to the resource room?	95%	05%
4. Did you notice any positive difference in your child at home?	80%	20%
5. Did you attend any of the parents' meetings offered by the resource room teacher?	60%	40%
a. If not, did you have the opportunity to attend a parents' workshop?	34%	66%
b. If you did attend a parents' meeting, did you find it helpful?	100%	____

6. If you felt there was some improvement in your child, would you list the areas of improvement below:

   90% listed some specific or general area of improvement. Of those, 61% listed academic improvement, 08% listed social improvement, 26% listed improvement in self-concept, and 19% mentioned improvement in attitude towards school & school work.

7. What other areas would you have liked to see improvement, but did not?

   26% of the respondents answered this question. Of those, 9 mentioned academic areas, 3 mentioned attitude and 4, specific behaviors.

8. Would you recommend this program to other parents?	100%	____

given the Peabody Individual Achievement Test (PIAT), the Classroom Behavior Inventory (CBI) and the Phonics Test (PT). The follow-up design was a 2(model) x 4(grade) factorial for three occasions of measurement.

Student Characteristics.

The average age, IQ, and socio-economic rating for the subjects in each group are given in Table 8. The sample contained 40 boys and 8 girls and was composed of 35 white and 13 black children. The average IQ for the eclectic group was 98.57 and that for the deficit group was 98.29. The average SES rating for the eclectic group was 4.57 and that for the deficit group was 3.80. Therefore, although the two groups were well matched for ability level, the children who were sampled from deficit classes were more advantaged than those who were sampled from eclectic classes.

Academic Achievement

The average PIAT total grade equivalent scores for each group in the follow-up sample are shown in Table 9 by grade level. The average PIAT total standard scores are given in Table 10 for the same groups.

Change over Treatment Period. In order to determine the significance of gains as the result of treatment, the average pre- and post-test scores for the 1972-73 school year were compared by using t-tests for related samples. When this analysis was carried out on the grade equivalent scores for each group it was found that both the deficit and eclectic groups made significant progress on all PIAT subtests and on total achievement over the period of treatment by project MELD teachers. The average gain in total achievement for the eclectic group was .69 years ($t = 7.62$, $p < .01$) and that for the deficit group was .63 years ($t = 7.15$, $p < .01$).

A 2(model) x 4(grade) analysis of variance on the gains in total achievement during the previous year failed to show significant differences

Table 8

Subject Characteristics for Follow-up Sample

Model	Eclectic				Deficit		
Grade	2	3	4	5	2	3	
N	6	6	7	6	7	6	
CA	93.17	108.0	118.86	130.83	95.43	105.67	
IQ	95.0	101.6	97.86	99.83	96.43	95.17	
SES	5.2	4.8	4.0	4.3	3.14	4.5	

Table 8

Subject Characteristics for Follow-up Sample

	Eclectic			Deficit			
	3	4	5	2	3	4	5
	6	7	6	7	6	4	6
	108.0	118.86	130.83	95.43	105.67	116.25	130.67
	101.6	97.86	99.83	96.43	95.17	101.75	99.83
	4.8	4.0	4.3	3.14	4.5	3.25	4.33

Table 9

Mean PIAT Total Grade Equivalents for Follow-up Sample

Grade	Eclectic			Deficit		
	F72	S73	W74	F72	S73	W74
2	1.30	1.74	2.15	1.02	1.54	1.74
3	2.13	2.75	3.06	1.92	2.50	2.76
4	2.27	3.15	3.50	2.31	3.17	3.21
5	3.78	4.75	4.65	3.51	4.01	4.00
Total	2.33	3.03	3.27	2.26	2.89	3.00

Table 10

Mean PIAT Total Standard Scores for Follow-up Sample

Grade	Eclectic			Deficit		
	F72	S73	W74	F72	S73	W74
2	98.14	100.85	96.71	90.20	96.20	89.00
3	99.16	94.50	92.00	94.80	97.60	91.60
4	92.00	94.00	88.50	87.85	93.50	88.00
5	90.20	96.20	89.00	90.83	92.33	86.16
Total	94.91	99.60	93.69	90.65	94.72	88.52

between the two models or among the four grades in average improvement. Therefore, it may be concluded that project MELD had a significant impact on the achievement of LD students over the period of intervention and that neither model was more effective than the other in this regard.

Change Over the Follow-Up Period. In order to assess the continued progress of the students in each group a series of related t-tests was carried out on the change in PIAT grade equivalent scores between last year's post-test and this year's follow-up test. Although the eclectic group showed a significant increase on the Reading Comprehension subtest, all other comparisons failed to reach an acceptable level of statistical significance. Similarly, the only reliable gain that was made by the deficit group over the follow-up period was on the General Information subtest.

The average gain in total achievement for the eclectic group was .24 years and that for the deficit group was .11 years. The analysis of variance on these data failed to show significant differences between the two models or among the grade levels in average gains following intervention. Therefore, one must conclude that the children who received services in project MELD did not continue to progress at the same rate after intervention as they did while in treatment.

Average Gains Relative to Peer Group. Figure 1 shows the average PIAT total grade equivalent score for each group and for the total sample on each occasion of measurement. This figure illustrates the significant progress made by each group over the course of intervention followed by a leveling-off effect in which both groups appear to make little additional progress in the first half of the next school year. In order to assess the progress of project MELD students in relation to that expected in their peer groups, the average PIAT standard scores were computed for each grade

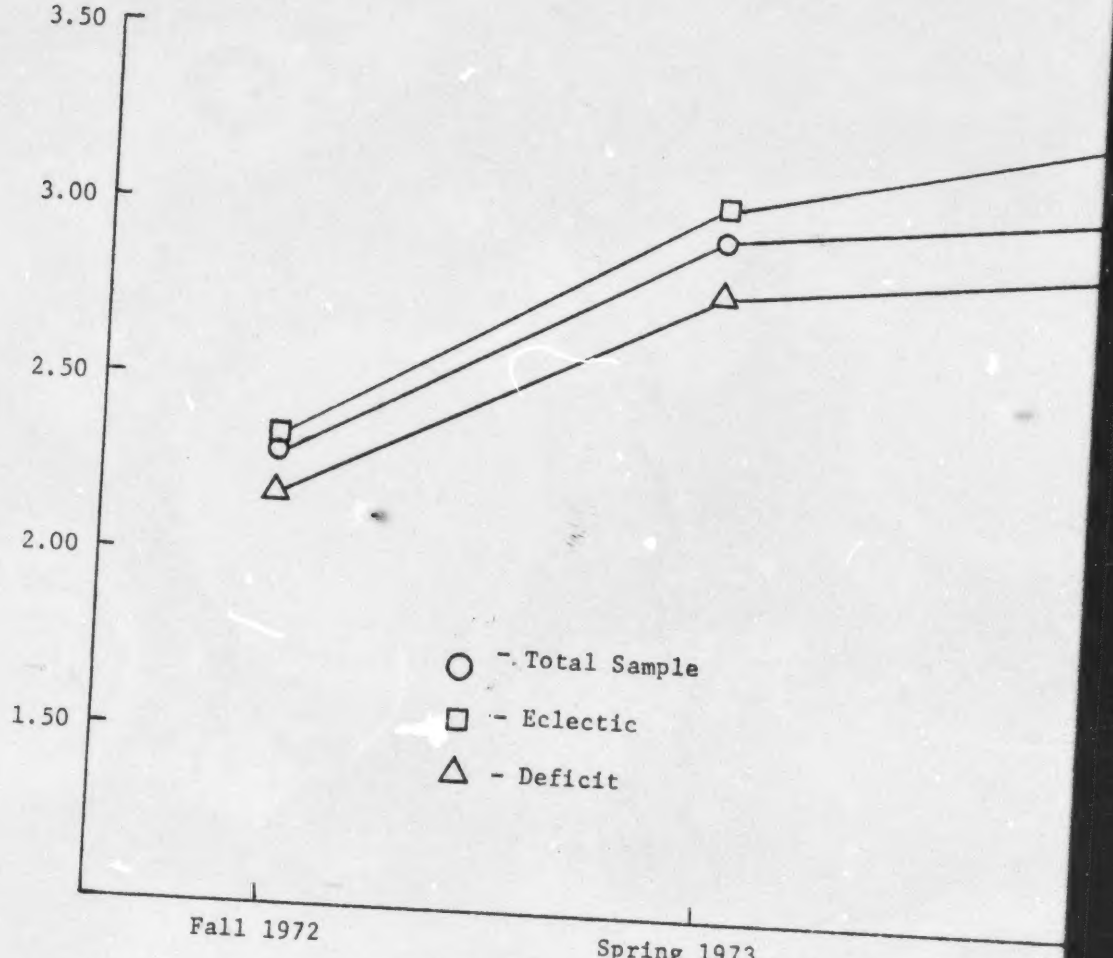
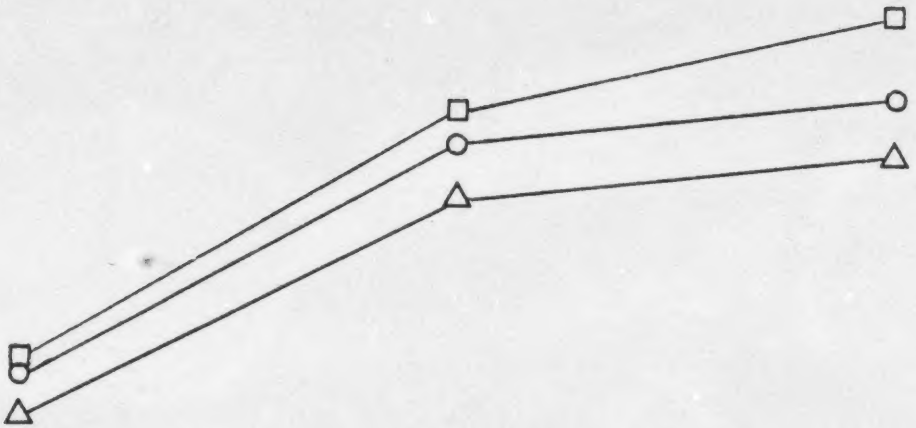


Figure 1. Average PIAT Total Grade Equivalent Scores For Each Group



○ - Total Sample

□ - Eclectic

△ - Deficit

Fall 1972 Spring 1973 Winter 1974

igure 1. Average PIAT Total Grade Equivalent Scores For Each Group.

on each occasion of measurement. These data have been reported in Table 10 and a plot of the average total standard scores is shown in Figure 2.

The analysis of these data indicated that both groups showed significant increases in their relative standing in total achievement immediately after treatment, and showed significant decreases over the period of the follow-up study. There were no significant differences between the deficit and eclectic groups or among the four grade levels in this pattern of change. In general, a similar trend was observed for each of the PIAT subtests. Therefore, although considerable progress was noted during the period of intervention, the average child in the program last year failed to maintain his relative level of attainment after a period without special services.

Phonics Test

The average scores on the Phonics Test for each group on each occasion of measurement are shown in Table 11. The analysis of the change scores for these data showed the same general trend noted above on the PIAT. Thus, the average improvement over the course of intervention proved to be significant for each group and no significant differences were found between the two models. On the other hand, the eclectic group showed a slight increase over the follow-up period, while the deficit group showed a slight decrease. Therefore, although the children in the sample tended to maintain their gains in this area, they made little additional progress following intervention and in several instances showed moderate declines.

Classroom Behavior Patterns

The average teacher ratings on the Classroom Behavior Inventory for each group at each occasion of measurement are given in Table 12. As in the previous year few significant changes were observed on this instrument.

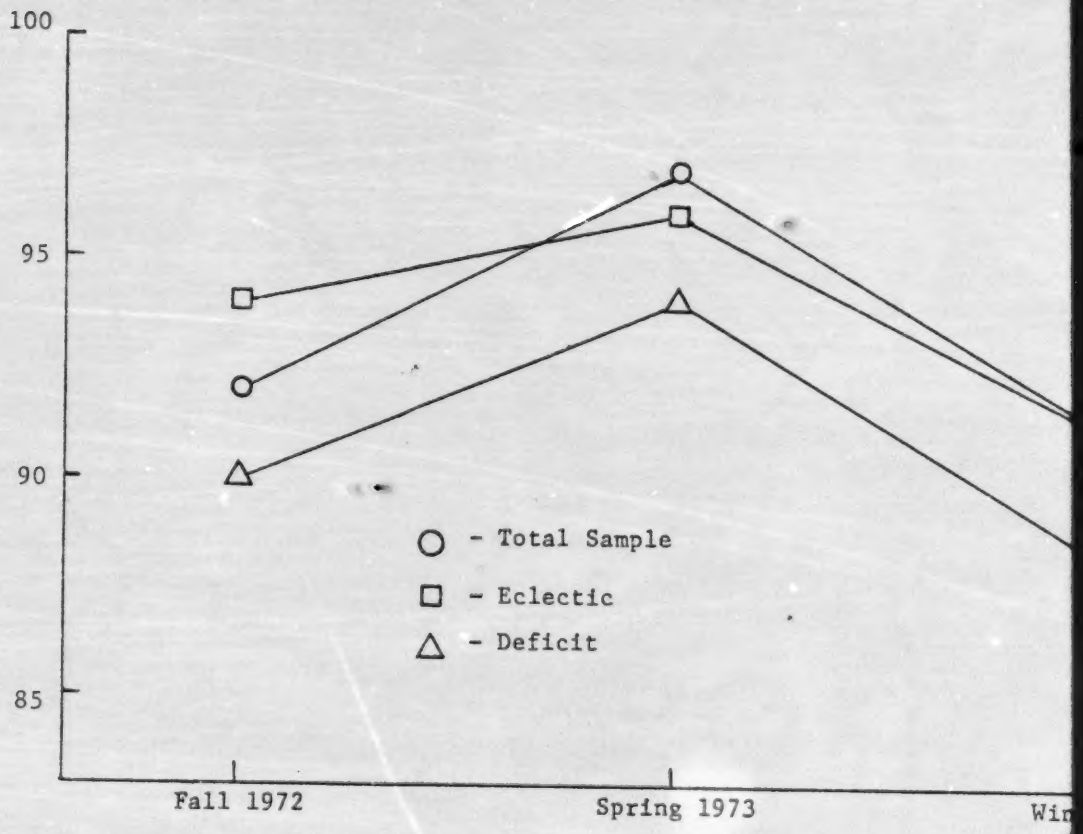
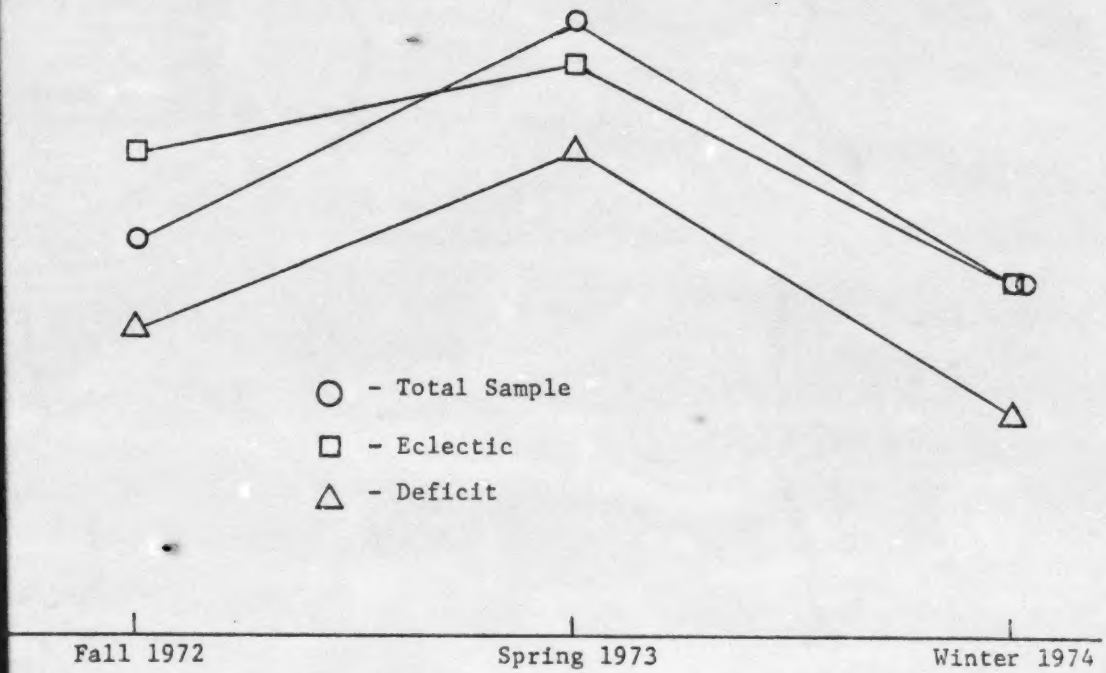


Figure 2. Average PIAT Total Standard Scores for Each Group.



ıre 2. Average PIAT Total Standard Scores for Each Group.

Table 11

Mean Phonics Scores for Follow-up Sample

Grade	Eclectic			Deficit		
	F72	S73	W74	F72	S73	W74
2	24.88	54.83	68.57	10.60	34.00	51.40
3	56.80	66.20	72.16	26.00	81.00	76.20
4	46.75	83.25	80.25	53.53	86.00	73.71
5	84.00	92.00	95.83	79.83	96.83	86.33
Total	52.00	72.65	78.65	44.63	76.09	72.69

Table 12

Average Ratings on the CBI for the Follow-up Sample

	Eclectic			Deficit		
	Fall 72	Spring 73	Winter 74	Fall 72	Spring 73	Winter 74
Task Orientation	7.16	7.61	7.44	7.31	8.21	7.78
Distractibility	9.89	10.04	8.87	9.92	9.37	9.34
Extroversion	7.80	8.25	8.29	9.92	9.75	8.75
Introversion	7.96	7.87	7.09	6.04	5.83	5.86
Considerateness	9.29	10.05	9.40	8.49	9.58	8.37
Hostility	5.52	5.16	6.41	6.89	6.47	6.47

Over the period of intervention, the eclectic group showed a decline in average ratings on the Hostility scale and the deficit group showed an increase on the Considerateness scale. No significant effects were found as a function of either remediation model, grade level, or occasion of measurement.

Given the evaluation findings of the previous year and those reported above for this year using the Pupil Rating Scale, one might well question the utility of this instrument for assessing change in social or personal behavior. Also, given the fact that no substantial changes were demonstrated on this instrument over the period of intervention, one would have little reason to expect any over the follow-up period.

Summary and Conclusions

During the 1973-74 school year, project MELD delivered services to approximately 134 learning disabled children in grades 1-4 according to one of two alternative models. The deficit model emphasized the remediation of specific weaknesses through one-to-one instruction by a resource teacher. The eclectic model stressed teacher consultation and attempted to capitalize on strengths as well as remediate weaknesses.

In order to evaluate program effectiveness, a sample of 97 children who participated in the project were pre- and post-tested on measures of academic achievement and classroom behavior. Parents were asked to complete a questionnaire and 24 classroom teachers were interviewed by the external evaluator. Also, a sample of 48 children who received services the previous year were followed-up and retested with measures of achievement and classroom behavior.

The analysis of these data indicated that project MELD had a significant impact on both the academic and social competences of learning disabled children. As in the previous year, the children who received

the services of project teachers made rather substantial gains in academic achievement over the period of the study, which were well substantiated by teacher reports of student progress. The data indicated that the average child who participated in the program was below grade level when referred and was functioning at grade level when intervention was terminated. Also, the classroom teachers who referred students to the program rated their children as significantly improved in both academic skills and in personal/social behavior.

The results from interviews with referring classroom teachers offered considerable evidence of teacher acceptance and support for the program. The teachers particularly valued the diagnostic work-ups and conferences, and were able to cite a number of specific instances where the project teacher had facilitated their work with a child or had changed the way they perceived his problems in the classroom. Similarly, the teachers reported an accepting, favorable attitude on the part of most parents which was also evident in the data from the parent questionnaire. As in the previous year, the program's success in promoting parent involvement was one of the most effective components of the project.

At the same time, the evaluation findings reported above revealed several trends which seem to have important implications for future program planning. First, the analysis of the follow-up data indicated that the children who received services the previous year failed to progress academically at the same rate over the first half of the next year without additional services. Thus, the findings tend to support the concerns frequently expressed by parents and classroom teachers that their children would not maintain their gains without continued support from the LD teacher. However, it should be noted that these results are not uncommon in the

literature on special intervention, particularly when the planned intervention is aimed at a specific problem and is of limited duration.

Secondly, although the findings reported above and those reported the previous year provide little support for the conclusion that either model is more effective in the long run than the other, the data do suggest a trend in this regard which requires some comment. For example, the results suggest that the type of concentrated, one-to-one instruction that was provided in the deficit classes may have more immediate benefits in specific academic areas than that provided in the eclectic classes. On the other hand, the kinds of services offered by the eclectic teachers may have more immediate effects on the social and academic behavior of the child in the classroom. The interpretation of these trends is complicated by the fact that children received different amounts of instruction under the two models and by the fact that little information was available on the nature and effectiveness of teacher consultation services.

In summary, the project was carried out by a highly competent and energetic staff. The management of the program was excellent and staff morale was high. The evaluation findings for the second year underscore the major conclusion that was reached the first year--that Project MELD continues to be an innovative and successful program which has demonstrated a significant impact on the students, teachers and community it was designed to serve. The problem remains of specifying those factors which facilitate the child's progress in the program and contribute to his continued progress after the program.